

# ScienceFest



10th National Clean Cities  
Conference and Expo  
May 2-5, 2004

**Wednesday, May 5, 2004**  
**9:00 a.m. to Noon**

**Greater Fort Lauderdale/Broward County Convention Center**  
**NO REGISTRATION FEE**



Hosted by the Department of Energy,  
Office of Energy Efficiency and Renewable Energy,  
Broward County Air Quality Division and  
the Gold Coast Clean Cities Program



# What is ScienceFest?

ScienceFest is a celebration of alternative transportation innovations. Understanding that children are critical players in our quest for clean air and a cleaner environment, the National Clean Cities Conference is a perfect backdrop for children to learn about transportation choices. Through vibrant presentations, an exciting transportation expo, and hands-on demonstrations, Broward County 7<sup>th</sup> grade students are invited to take part in this unparalleled learning opportunity.

The U.S. Department of Energy (DOE) is committed to leadership in environmental education and outreach as it relates to clean transportation alternatives through its sponsorship of ScienceFest. The DOE Clean Cities Program is a voluntary, locally based government/industry partnership with the goal of expanding the use of alternatives to gasoline and diesel fuel and accelerating the deployment of alternative fuel vehicles (AFVs).



**Conference and Expo Location:**  
**Greater Fort Lauderdale/  
Broward County Convention Center**  
**1950 Eisenhower Blvd., Fort Lauderdale, FL 33316**

## QUESTIONS?

Call 954-519-1220 or visit ScienceFest web site at  
[www.ccities.doe.gov/conference/lauderdale/sciencefest.html](http://www.ccities.doe.gov/conference/lauderdale/sciencefest.html)

## ScienceFest Highlights

**Keynote Speaker: Mr. Robert Krampf**  
presentations at 9:45 a.m. and 10:45 a.m.  
[www.krampf.com/fpl\\_ee.htm](http://www.krampf.com/fpl_ee.htm)



Students will be thrilled by spectacular demonstrations such as the "hair-raising" Van de Graaff static generator and the amazing million volt sparks from the Tesla coil.

FPL's Electrifying Experience has been carefully designed to be entertaining, as well as educational. Mr. Krampf will keep students "oohing" and "ahhing" with million volt sparks and hair-raising static demonstrations, while teaching them the basics of electricity and electrical safety. Some of the topics covered include electrical history, static charges, volts, amps, alternating current, direct current, and high-frequency electricity.



**Expo Hall**  
Open 9:00 a.m. to Noon  
Mini-sessions begin at 9:45 a.m. and 10:45 a.m.

The National Clean Cities Conference tradeshow is the world's largest gathering of AFVs and new vehicle technologies. The 70,000 square feet of exhibit space is easily transformed into a learning laboratory where students get hands-on experience understanding how and why alternative fuels are an answer to emission reductions and energy security. In addition, there will be science-based mini-sessions and displays provided by local organizations. Expo Hall activities include:

- EV Challenge
- Robotics
- Passport to the Future
- Sea Turtle Biology
- IGFA Touch Tank
- ALA Asthma Bus
- Air Monitoring
- Material Recovery System Model
- Waste to Energy Plant Model

### The Expo Hall will also feature:

**AFV Art Poster Gallery:** Display of posters created by Broward County elementary school students on cars of the future

**AFV Science Fair Projects:** Exhibit of the winning projects of the AFV Science Fair Special Award from middle and high schools





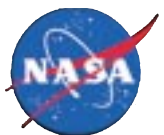
# Concurrent Sessions

[all sessions at 9:45 a.m., repeating at 10:45 a.m.]



**Hydrogen Fuel Cell Technology**  
presented by the *Department of Energy*  
[www.eere.energy.gov/hydrogenandfuelcells](http://www.eere.energy.gov/hydrogenandfuelcells)

What's the buzz about hydrogen? Through a hands-on activity, students will learn about the concept of a "hydrogen economy," how fuel cells work, and how hydrogen and fuel cells will fundamentally change the way we produce, store, and use energy. Students will learn about the safe use of hydrogen — what may really have happened to the Hindenburg — and how they can help our country move toward a hydrogen energy future.



**NASA, Hydrogen, and You**  
presented by *NASA*  
[www.nasa.gov](http://www.nasa.gov)

Sure NASA is the Space Shuttle and the International Space Station, but it is much more than that. NASA's Mission is: "Understanding and protecting our home planet; exploring the universe and searching for life; inspiring the next generation of explorers, as only NASA can." This includes developing advanced aircraft and aero propulsion, Earth observing satellites and interplanetary probes. This session will focus on just a piece of the NASA picture: NASA's activities using hydrogen as a rocket fuel and for fuel cells. These activities and the associated technology development helped set the stage for our society's use of hydrogen as a clean fuel for automobiles and electrical power.



**FLORIDA SOLAR ENERGY CENTER**  
A Research Institute of the University of Central Florida



**Solar Energy**  
presented by the *Florida Solar Energy Center*  
[www.fsec.ucf.edu](http://www.fsec.ucf.edu)

The sun is an inexhaustible, pollution-free source of quiet, safe, energy. Photovoltaic cells produce electricity directly from solar energy. This solar energy can be used to charge the batteries of an electric car or power a solar car directly. Also, solar energy can be used to generate hydrogen for fuel cell cars. The theory, application, and components of solar energy generation systems used for transportation will be presented to students.



**EnviroScape**  
presented by the *South Florida Water Management District*  
[www.sfwmd.gov](http://www.sfwmd.gov)

The Everglades is a globally unique ecosystem supporting a vast array of plant and animal life. It has molded the regional character of central and southern Florida and sustains the economic and cultural growth of the region by

contributing to Florida's water quality, water supply, flood control, recreation and aesthetics. Through demonstrations with the EnviroScape model, students will learn about the importance of wetlands in protecting lakes, rivers and bays, and in providing flood protection.



**Energy Transformations**  
presented by the *Museum of Discovery and Science*  
[www.mods.org](http://www.mods.org)

Electricity is everywhere in nature, even in our bodies. All electricity producing devices simply rearrange charges that were already there into a more useful configuration. This session will introduce the relation between magnetism and electricity and then let students move magnets over various coils and see the needle on the meter move as electricity is produced. This will be followed by a short introduction to more exotic methods such as thermocouples and piezoelectric materials. Students will be able to see a thermocouple in action as well as see and feel the spark produced when the piezo crystal is deformed.



**Recycling**  
presented by the *Office of Integrated Waste*  
[www.broward.org/oiwm](http://www.broward.org/oiwm)

Reduce, reuse, recycle. Choose to be part of the solution by learning to protect the environment. Students will discover how trash is turned to treasure in the movie "All About Garbage." They'll learn about energy transfer in a discussion on Broward County's Waste to Energy plants. You will never look at trash the same way again!



**Mad Science®**  
presented by *Mad Science South Florida*  
[www.madscience.com](http://www.madscience.com)

Learn about electricity, pressure, alternative forms of energy and space exploration in this workshop presented by the world's largest children's science education and entertainment company. Using diffraction glasses and hands-on experimentation, students will learn about Newton's Law and the white light spectrum. Demonstrating the properties of alternative fuel sources, presenters will excite and entice young minds toward future developments in this important sphere of science exploration. Some of Mad Science partners are MGM, Scholastic Books, and Kennedy Space Center.

# Registration Form



There is no fee to participate in ScienceFest, but you must register in advance. To register, fill out this form and fax to **954-519-1495** or mail to:

**Broward County Department of Planning and  
Environmental Protection Air Quality Division  
Attn. ScienceFest  
218 SW 1<sup>st</sup> Ave., Fort Lauderdale, FL 33301**

Teacher Name: \_\_\_\_\_

School Name: \_\_\_\_\_

School Address: \_\_\_\_\_

\_\_\_\_\_

Phone Number: \_\_\_\_\_ Fax Number: \_\_\_\_\_

E-mail Address: \_\_\_\_\_

Number of Students in Your Group: \_\_\_\_\_ Number of Buses: \_\_\_\_\_

Number of Adults in Your Group (**we require one adult per every ten students**): \_\_\_\_\_

**Please select first, second and third choices of sessions for both 9:45 a.m. and 10:45 a.m.  
Each session is 45 minutes long.**

Expo Hall mini sessions ..... 9:45 a.m. \_\_\_\_\_ 10:45 a.m. \_\_\_\_\_

Hydrogen Fuel Cell Technology ..... 9:45 a.m. \_\_\_\_\_ 10:45 a.m. \_\_\_\_\_

Recycling ..... 9:45 a.m. \_\_\_\_\_ 10:45 a.m. \_\_\_\_\_

EnviroScape ..... 9:45 a.m. \_\_\_\_\_ 10:45 a.m. \_\_\_\_\_

Energy Transformations ..... 9:45 a.m. \_\_\_\_\_ 10:45 a.m. \_\_\_\_\_

NASA, Hydrogen and You ..... 9:45 a.m. \_\_\_\_\_ 10:45 a.m. \_\_\_\_\_

Solar Energy ..... 9:45 a.m. \_\_\_\_\_ 10:45 a.m. \_\_\_\_\_

Mad Science ..... 9:45 a.m. \_\_\_\_\_ 10:45 a.m. \_\_\_\_\_

Keynote Speaker, Mr. Robert Krampf ..... 9:45 a.m. \_\_\_\_\_ 10:45 a.m. \_\_\_\_\_

**REGISTRATION DEADLINE February 27, 2004 or when capacity is reached.  
Questions? Call 954-519-1220 or e-mail [airoutreach@broward.org](mailto:airoutreach@broward.org)**